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SEP 21 2006

REMARKS

## I. INTRODUCTION

In response to the Office Action dated July 25, 2006, no claims have been canceled, amended or added. Claims 1-12 remain in the application. Entry of these amendments, and re-consideration of the application, is requested.

## II. PRIOR ART REJECTIONS

In paragraphs (3)-(11) of the Office Action, claims 1, 2, 5, 6, and 9-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sicher, U.S. Patent No. 6,385,195, in view of Frid, U.S. Patent No. 6,137,791. In paragraphs (12)-(14) of the Office Action, claims 3, 4, 7, and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sicher, in view of Frid, and further in view of Olkkonen, PCT Published Application No. WO 98/43456.

Applicants' attorney respectfully traverses these rejections. Applicants' attorney respectfully submits that Applicants' claimed invention is patentable over the cited references. Specifically, Applicants' attorney asserts that the references, taken individually or in combination, do not teach or suggest the specific combination of elements recited in Applicants' claims.

Neither Sicher nor Frid disclose messages being transmitted between a home agent, a router and a foreign agent using an IP network separate from the cellular network

With regard to Applicants' independent claims 1 and 12, the Office Action asserts that the mobile switching center (MSC) of Sicher is a router and the MSC of Sicher communicates with the BTS using a cellular interface.

However, the Office Action admits that Sicher does not expressly disclose a foreign agent (FA), coupled to the router, and a home agent (HA), coupled to the router, wherein the home agent communicates with the router and the foreign agent for registering mobile telephones and transmitting messages using an internet-protocol network separate from the cellular network; wherein messages are transmitted using the internet protocol network between the home agent and the router.

Nonetheless, the Office Action asserts that Frid teaches a home agent communicating with the router and a foreign agent for registering mobile telephones and transmitting messages using an internet-protocol network separate from the cellular network, at col. 1, lines 48-53; col. 6, lines 41-43; and col. 7, lines 15-20. Moreover, the Office Action states the following:

Applicant asserts that the cited prior art fails to teach an "IP network separate from the cellular network" since Frid, the prior art relied upon to teach this limitation, teaches using "an IP tunnel." Applicant asserts that "an IP tunnel" "is an admission that [Frid] does not use an IP network separate from the cellular network, but instead merely tunnels an IP connection (presumably) through the cellular network." Examiner, respectfully, disagrees. Frid explicitly discloses that the IP tunnel is effectuated "by encapsulating the received IP packet addressed to the mobile station 20 with another IP packet addressed to the identified VPMSC 80" (col. 5, lines 22-27). Thus, contrary to Applicant's assertion, the IP tunneling occurs in an IP network.

Applicants' attorney notes that, in this regard, this portion of Frid refers to a GPMSC (Gateway Packet Mobile Switching Center) and a VPMSC (Visited Packet Mobile Switching Center), but not a foreign agent (FA) or a home agent (HA).

Moreover, as shown in FIG. 1, the GPMSC 70 and VPMSC 80 communicate across a backbone network 15, which appears to be a cellular network. Consider the following description found in Frid:

Frid: Col. 5, lines 11-37

The GPMSC 70 then performs an interrogation with the HLR 50 to determine how to route the received packet data. As described above, the HLR 50 retains information regarding the current location of the mobile station. The GPMSC 70 provides the HLR 50 with the received IP address. Utilizing the received IP address and correlated mobile identification number, the HLR 50 is able to ascertain the current location of the traveling mobile station 20. The HLR 50 then returns routing instructions to the requesting GPMSC 70. Such routing instructions include, for example, an Internet Protocol (IP) address representing a visited packet mobile switching center (VPMSC) 80 associated with the serving VMSC 40. The GPMSC 70, in turn, establishes an IP tunnel 90 with the identified VPMSC 80. The GPMSC 70 effectuates the IP tunnel 90 by encapsulating the received IP packet data addressed to the mobile station 20 within another IP packet addressed to the identified VPMSC 80. The mobile identification number is further encapsulated within the transmitted IP packet. Accordingly, the received packet data is rerouted to the VPMSC 80 associated with the VMSC 40 currently serving the traveling mobile station 20. The VPMSC 80 then extracts the encapsulated original IP packet and identifies the mobile station using the provided mobile station identification number. The extracted IP packet data are then forwarded to the serving VMSC 40 and delivered to the mobile station 20 by way of radio-interface 100. Accordingly, packet data communication with the mobile station 20 is effectuated.

Note that Frid earlier describes the backbone network 15 in the following manner:

Frid: Col. 4, lines 19-22

In case the communicated data is normal voice data, the VMSC 40 communicates with an associated backbone network 15 to communicate the voice data with a specified destination terminal.

Moreover, FIG. 1 of Frid shows the IP tunnel 90 through the backbone network 15:

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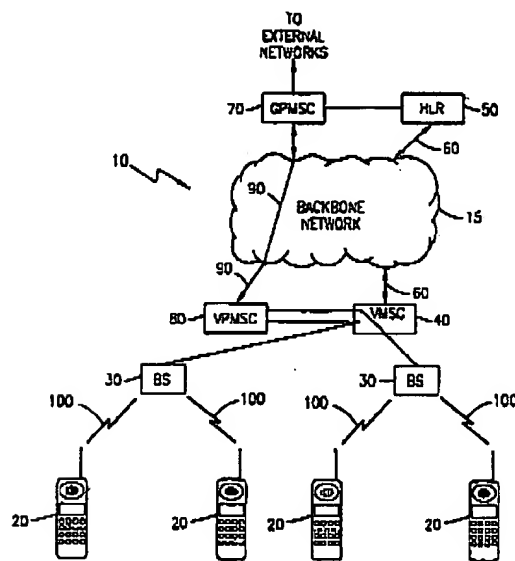


FIG. 1

In other words, the GPMSC 70 establishes an IP tunnel 90 through the backbone network 15 with the VPMS 80, and then sends an IP packet addressed to the VPMS 80 that contains an IP packet addressed to the mobile station 20.

Further, in describing the communication between a foreign agent (FA) and home agent (HA), Frid states that the home agent and foreign agent also use IP tunneling through the backbone network 15:

Frid: Col 7, lines 9-32

The mobile station 20 initiates a data session by requesting packet data communication with the serving BS 30. The BS 30 then forwards the request through the serving VMSC 40 to an associated foreign agent and serving router (FA/SR) 310. The FA/SR 310 then analyzes the IP address transmitted by the traveling mobile station 20 and determines a home agent 320 associated therewith. The HA 320 is a packet data communication node for keeping track of the mobile station's current location and for performing gateway function for receiving and routing incoming packet data. The FA 310 then communicates with the identified HA 320 to establish an IP tunnel 330 therebetween.

Incoming packet data addressed to the IP address associated with the mobile station 20 are first delivered to the HA 320 associated to the mobile station 20. The HA 320 then reroutes the received packet data to the connected FA/SR 310 by similarly encapsulating the received IP packet within another IP packet addressed to the FA/SR 310. The encapsulated IP packet is then transmitted over the established IP tunnel 330. The FA/SR 310 then extracts the original packet data from the received IP packet and forwards the extracted data through the serving VMSC 40 to the mobile station 20 by way of radio-interface 100 as described above.

Again, FIG. 3 of Frid, like FIG. 1, shows the IP tunnel 330 through the backbone network 15:

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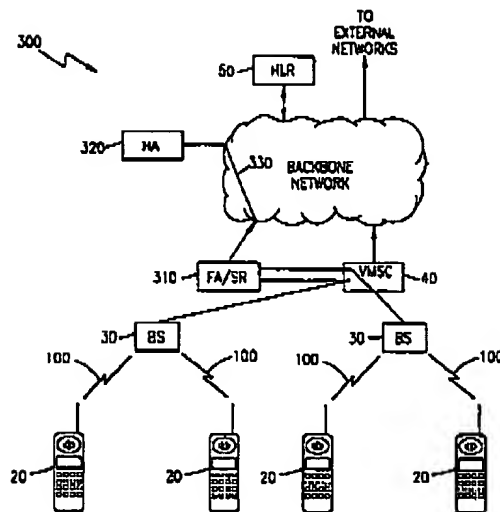


FIG. 3

In other words, the FA 310 establishes an IP tunnel 330 through the backbone network 15 with the HA 320, and then sends an IP packet addressed to the HA 320 that contains an IP packet addressed to the mobile station 20.

As previously argued, Frid fails to teach a home agent communicating with a foreign agent using an internet-protocol network separate from the cellular network. Moreover, the fact that the foreign agent encapsulates another packet within the packet addressed to the home agent is irrelevant.

As previously argued, and not disputed by the Office Action, "tunneling" is a method of transmission over networks based on differing protocols. IP tunneling 330 between the foreign

agent 310 and home agent 320 on the backbone network 15 is an admission that Frid does not use an IP network separate from the cellular network to connect the foreign agent 310 and the home agent 320. Consequently, there is only the one network in Frid (i.e., the backbone network) and not an IP network separate from a cellular network.

*Neither Sicher nor Frid disclose messages being transmitted between a home agent and a handoff server using an IP network separate from the cellular network*

A similar argument can be made with regards to Applicants' independent claim 6.

The Office Action asserts that, incorporating the rejection of claims 1 and 12, Sicher in view of Frid discloses each limitation of claim 6, as outlined in the rejection of claims 1 and 12, except that the Office Action also asserts that "router" (MSC) is a "handoff server." The Office Action further asserts that Sicher in view of Frid discloses that the MSC is involved in the handoff, at col. 7, lines 51-60 of Frid.

However, col. 7, lines 51-60 of Frid indicates that the home agent and handoff server do not use an internet-protocol network separate from the cellular network:

*Frid: Col. 7, lines 51-60 (actually, lines 47-60)*

As described above, the mobile station 20 traveling within a particular geographic area requests packet communication by transmitting a packet communication request 400 towards the serving BS1 30. The BS1 30 relays the request 410 to the connected VMSC1 40. The VMSC1 40 determines that this request is associated with packet data communication and establishes an IP communication link 420 with the foreign agent/serving router (FA/SR1) 310 serving that particular geographic area. As a result, a Point-to-Point Protocol (PPP) connection is established between the mobile station 20 and the FA/SRI 310. The FA/SRI 310 then communicates with a home agent (HA) 320 associated with the traveling mobile station 20 and effectuates an IP tunnel 440 therebetween. Packet data delivery 450 over the IP tunnel 440 is thereafter effectuated.

In other words, the VMSC1 40 (the handoff server) establishes an IP link 420 with the foreign agent 310, and the foreign agent 310 then establishes an IP tunnel 440 through the backbone network 15 with the HA 320.

As previously argued, Frid fails to teach a home agent that communicates with a handoff server for transmitting messages using an internet-protocol network separate from the cellular

network. Moreover, the fact that the foreign agent encapsulates another packet within the packet addressed to the home agent is irrelevant.

As noted above, when Frid describes setting up an "IP tunnel" between the foreign agent and home agent, this is an admission that it does not use an IP network separate from the cellular network, but instead merely tunnels an IP connection through the cellular network that connects the foreign agent and the home agent. Consequently, there is only the one cellular network and not a separate IP network.

*Olkkonen does not overcome the deficiencies of Sicher or Frid*

Olkkonen does not overcome these deficiencies of Sicher and Frid. Recall that Olkkonen was cited only against Applicants' dependent claims, and only for teaching the use of ATM in cellular telephony. Thus, even when combined, Sicher, Frid and Olkkonen do not teach all the elements of Applicants' claims.

*Summary*

The various elements of Applicants' claimed invention together provide operational advantages over Sicher, Frid and Olkkonen. In addition, Applicants' invention solves problems not recognized by Sicher, Frid and Olkkonen.

Thus, Applicants' attorney submits that independent claims 1, 6, and 12 are allowable over the references. Further, dependent claims 2-5 and 7-11 are submitted to be allowable over the references in the same manner, because they are dependent on independent claims 1, 6, and 12, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-5 and 7-11 recite additional novel elements not shown by the references.

### III. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

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Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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